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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,693	11/21/2002	Sergey Nikolayevich Kharchenko	205,516	3735
<div>7590 11/01/2007 ABELMAN, FRAYNE &amp; SCHWAB 666 Third Avenue New York, NY 10017-5621</div>			<div>EXAMINER BODDIE, WILLIAM</div>	
			<div>ART UNIT 2629</div>	<div>PAPER NUMBER</div>
			<div>MAIL DATE 11/01/2007</div>	<div>DELIVERY MODE PAPER</div>

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/069,693	<b>Applicant(s)</b> KHARCHENKO ET AL.	
	<b>Examiner</b> William L. Boddie	<b>Art Unit</b> 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 09 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 19-21, 23-29, 32 and 35-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19-21, 23-29, 32 and 35-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/9/07</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. In a preliminary amendment, dated August 9<sup>th</sup>, 2007, the Applicant cancelled claims 17-18, 22, 30-31, 33-34 and added new claims 35-40. Currently claims 19-21, 23-29, 32 and 35-40 are pending.

#### ***Response to Arguments***

2. Applicant's arguments, see page 15 of the Remarks, filed August 9<sup>th</sup>, 2007, with respect to the rejection(s) of claim(s) 26-29 under Remitz have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Malkin.

3. Applicant's arguments filed August 9<sup>th</sup>, 2007 have been fully considered but they are not persuasive.

On pages 13-14 of the Remarks, the Applicants argue that Malkin does not disclose all the limitations of claim 37. Specifically, the Applicants allege that Malkin's invention does not disclose a cantilevered carrier. The Applicants point to an intermediate arms, 114 in figure 5, which they state is what the carrier is fixed to. Thus there are no carriers that are cantilevered on the rotary drive shaft.

The Examiner must respectfully disagree. The design of Malkin demonstrated in figure 5 certainly seems to satisfy at least claim 37. It is the Examiner's position that the arms labeled as 114 in conjunction with the vertical 110 in figure 5 combine to satisfy the "carrier" limitation of the claims. Support for this interpretation is found the Applicants' own disclosure. Specifically, the balancer in figure 1, for example, is seemingly attached to an "arm" very similar to the design of Malkin.

Applicants additionally argue on page 14 that Malkin only discloses a straight generatrix. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., curved generatrix) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 36 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 36, this claim currently is dependent upon claim 27. Claim 36 presents further limitations regarding, "each pair of adjacent parallel drive shafts." However, there is never any prior mention of a pair of adjacent parallel drive shafts.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

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7. Claims 19-20, 23-25, 35 and 37-38 are rejected under 35 U.S.C. 102(e) as being anticipated by Malkin (US 6,278,419).

**With respect to claim 37**, Malkin discloses, a stroboscopic display device (fig. 1) comprising:

(a) a rotary drive (136 in fig. 6) which has an output shaft (170 in fig. 6; col. 4, lines 19-27),

(b) at least one carrier (110, 114 in fig. 6) of point light sources (112 in fig. 6), the carrier being cantilevered (col. 4, lines 4-14) onto said shaft (20 in fig. 1) of the rotary drive and formed as a rod which has (clear from fig. 6 that the arm of Malkin satisfies the cantilever limitation):

a shape corresponding to an appropriate revolution body generatrix (cylinder in this instance);

a thickness commensurable with the cross-section of a point light source (clear from fig. 1), wherein the thickness  $m$  of the carrier is defined by the expression:

$$d_{pls} < m \leq 9d_{pls}$$

where  $d_{pls}$  is the cross-section of the light-emitting surface of a point light source (seems clear that fig. 1 defines a thickness that is certainly falls in this range); and

a width, measured radially, which is sufficient for the carrier to illusorily disappear from the vision field of a spectator when gyrated (clear from fig. 6, by the limited thickness of 110), wherein the width  $B$  of the carrier is determined by the expression:

$$B \leq 0.1R_{max}$$

where  $R_{\max}$  is the radius of the circle described by the point light source, which is maximally distanced from the axis of the drive shaft (this again seems quite clear from fig. 1 that the width of the carrier is less than one-tenth of the radius);

(c) a plurality of point light sources arranged on the external surface of said carrier (12 in fig. 1); the optical axis of each said light source is perpendicular to the revolution body generatrix, which is formed by a selected shape of said carrier (clear from fig. 1, that the light sources are perpendicular to the carrier, also see fig. 5); and

(d) a control means including a microprocessor to control said point light sources (60 in fig. 2; col. 4, lines 36-44); the control means includes:

a sensor (14 in fig. 1) to signal said carrier position (col. 4, lines 54-67),

a synchronizer (col. 6, lines 3-9) to synchronize the operation of light sources, and

program means to record and process the data to be displayed and generate commands to cut in and out said light sources (floppy disk and microprocessor; col. 5, lines 46-47; col. 7, lines 9-32 for example).

**With respect to claim 38**, Malkin discloses, the device according to claim 37 (see above), wherein the geometrical plane situated with respect to the geometrical plane of said carrier under the angle  $\alpha$  selected from a range of  $0^\circ < \alpha < 180^\circ$  there is cantilevered on the drive shaft at least one additional carrier shaped correspondingly to an appropriate revolution body generatrix, which has exterior point light sources associated with said control means (col. 6, lines 25-31; discloses, that each of the aperture, 22, will contain a pixel column ).

**With respect to claim 19,** Malkin discloses, the stroboscopic display device according to claim 37 (see above) that has in a geometrical plane of said carrier a balancer cantilevered onto the rotary output drive shaft oppositely to the carrier (note the oppositely placed columns of light sources, each pair constitutes a balancer and a carrier).

**With respect to claim 20,** Malkin discloses, the stroboscopic display device according to claim 19 (see above), wherein said balancer is formed as a carrier shaped correspondingly to an appropriate revolution body generatrix and furnished on its exterior with point light sources associated with said control means (each column of light sources, 112 in fig. 6, is shaped correspondingly and furnished with exterior point lights).

**With respect to claim 23,** Malkin discloses, the stroboscopic display device according to claim 38 (see above), wherein main and the additional carriers are shaped and dimensioned identically (clear from fig. 1) and placed with angular spaces approximately aliquot to 45 (as disclosed, Malkin proposes 64 equidistant carriers, col. 6, lines 25-31.  $360/64 = 5.625$ .  $5.625 \times 8 = 45$ . As such each carrier would be spaced apart by an angle, 5.625, that is aliquot to 45).

**With respect to claim 24,** Malkin discloses, the device according to claim 38 (see above), wherein each carrier has an opposite cantilevered balancer placed in a geometrical plane of associated with each respective carrier (it should be clear from fig. 6 and the previously cited portions of Malkin that each carrier has an identical carrier exactly opposite it).

**With respect to claim 25**, Malkin discloses, the stroboscopic display device according to claim 24 (see above), wherein each balancer is shaped correspondingly to an appropriate revolution body generatrix and exteriorly furnished with point light sources associated with said control means (clear from fig. 6).

**With respect to claim 35**, Malkin discloses, the stroboscopic display device according to claim 23 (see above) wherein each carrier has an opposite cantilevered balancer placed in the geometrical plane of this carrier (note the oppositely placed columns of light sources, each pair constitutes a balancer and a carrier; fig. 6).

8. Claim 37 is rejected under 35 U.S.C. 102(e) as being anticipated by Nobile et al. (US 5,057,827).

**With respect to claim 37**, Nobile discloses, a stroboscopic display device (fig. 1) comprising:

(a) a rotary drive (16 in fig. 1), which has an output shaft (14 in fig. 1),  
(b) at least one carrier (12,18 in fig. 1) of point light sources (20 in fig. 1), with the carrier is cantilevered (fig. 2) onto said shaft of the rotary drive (clear from fig. 1) and formed as a rod (again see figs. 1 and 2) which has:

a shape corresponding to an appropriate revolution body generatrix (col. 4, lines 47-54),

a thickness commensurable with the cross-section of a point light source (clear from figs. 1-2), wherein the thickness  $m$  of the carrier is defined by the expression:

$$d_{pls} < m \leq 9d_{pls}$$



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where  $d_{pls}$  is the cross-section of the light-emitting surface of a point light source (seems clear that fig. 1 defines a thickness that is certainly falls in this range); and

a width, measured radially, which is sufficient for the carrier to illusorily disappear from the vision field of a spectator when gyrated (clear from fig. 2, by the limited thickness of 18), wherein the width B of the carrier is determined by the expression:

$$B \leq 0.1R_{max}$$

where  $R_{max}$  is the radius of the circle described by the point light source, which is maximally distanced from the axis of the drive shaft (this again seems quite clear from figs. 1-2 that the width of the carrier is less than one-tenth of the radius);

(c) a plurality of point light sources arranged on the external surface of said carrier (20 in fig. 1); the optical axis of each said light source is perpendicular to the revolution body generatrix, which is formed by a selected shape of said carrier (clear from fig. 1); and

(d) a control means including a microprocessor (42 in fig. 3) to control said point light sources (col. 5, lines 20-28; for example); the control means includes:

a sensor (26 in fig. 3) to signal said carrier position (col. 5, lines 18-28),

a synchronizer (col. 5, lines 20-28) to synchronize the operation of light sources, and

program means to record and process the data to be displayed and generate commands to cut in and out said light sources (col. 5, lines 13-17, for example).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Malkin (US 6,278,419) in view of Bricker (US 3,738,035).

**With respect to claim 21**, Malkin discloses, the stroboscopic display device according to claim 19 (see above).

Malkin does not expressly disclose wherein at least one of the carrier and the balancer is additionally furnished with point light sources on its respective interior facing the drive shaft axis.

Bricker discloses, a rotating display device having several plastic columns (56 in fig. 1) which when illuminated directs light inward (note the rays in fig. 5) to face the drive shaft axis (48 in fig. 1).

Bricker and Malkin are analogous art because they are both from the same field of endeavor namely, rotating illuminating display devices.

At the time of the invention it would have been obvious to one of ordinary skill in the art to include light sources to emanate light inwards on the carriers of Malkin as taught by Bricker.

The motivation for doing so would have been for the increased visually appearance (Bricker; col. 3, lines 1-5).

11. Claims 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malkin (US 6,278,419) in view of Yuen et al. (US 5,041,947).

**With respect to claim 26**, Malkin discloses, the device according to claim 37 (see above).

Malkin does not expressly disclose additional rotary drive shafts.

Yuen discloses, wherein additional drive shafts spaced apart from one another have at least one cantilevered carrier shaped correspondingly to an appropriate revolution body generatrix (fig. 5).

Yuen discloses, two spaced apart drive shafts (approx. 60 and 60' in fig. 12), which are rotationally synchronized together (col. 6, lines 12-20) by a synchronizing means (belts in fig. 12);

wherein the drive shafts are similarly designed.

Yuen and Malkin are analogous art because they are both from the same field of endeavor namely, rotating display devices comprising a plurality of LED's.

At the time of the invention it would have been obvious to one of ordinary skill in the art to incorporate sync an additional drive shaft and cantilevered carrier of Malkin, with drive belts as taught by Yuen.

The motivation for doing so would have been the obvious advantage of ensuring that both of the drive shafts are turning at the same rate, thereby allowing them to act in concert with each other.

**With respect to claim 27**, Yuen and Malkin disclose, the stroboscopic display device according to claim 26 (see above).

Malkin, when combined with Yuen, further discloses, wherein the first drive shaft and at least one additionally drive shaft are associated with a common motor by a synchronizing transmission (Yuen; note the common motor 21 in fig. 12).

12. Claims 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malkin (US 6,278,419) in view of Lewis et al. (US 2,293,990).

**With respect to claim 28**, Malkin discloses, the stroboscopic display device according to claim 37 (see above).

Malkin does not expressly disclose, a second rotary drive shaft.

Lewis discloses, a second rotary shaft (top 13 in fig. 2) positioned adjacent and parallel to a rotary drive shaft (bottom 13 in fig. 1) forming at least a first pair of adjacent parallel drive shafts, wherein each first pair of adjacent parallel drive shafts (each 13 in fig. 2) is synchronized in phase (col. 3, lines 47-51, discloses, that the fig. 2 rotations need to be identical) and placed with the space A defined by the expression:

$$A < \max R_i + \max R_{i+1}$$

where  $\max R_i + \max R_{i+1}$  is the sum of radii of circles described by the light sources maximally distanced from the axes of the corresponding drive shafts (Clear from fig. 2, that the two circumferences overlap in the middle; also see col. 2, lines 3-11).

Malkin and Lewis are analogous art because they are both from the same field of endeavor namely, rotating, illuminated advertising displays.

At the time of the invention it would have been obvious to one of ordinary skill in the art to increase the number of rotating drive shafts of Malkin and place them as taught by Lewis.

The motivation for doing so would have been to allow a larger display surface, as well as to continually change the displayed colors (Lewis; col. 1, lines 15-20).

**With respect to claim 29**, Malkin and Lewis disclose, the stroboscopic display device according to claim 28 (see above).

Malkin, when combined with Lewis, further discloses, more than two parallel drive shafts each drive shaft having carriers shaped and situated identically in initial angular positions (Lewis; fig. 6).

13. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Malkin (US 6,278,419) in view of Yuen et al. (US 5,041,947) and further in view of Lewis et al. (US 2,293,990).

**With respect to claim 36**, Malkin and Yuen disclose, the stroboscopic display device according to claim 27 (see above).

Neither Yuen nor Malkin expressly disclose, a second rotary drive shaft.

Lewis discloses, a second rotary shaft (top 13 in fig. 2) positioned adjacent and parallel to a rotary drive shaft (bottom 13 in fig. 1) forming at least a first pair of adjacent parallel drive shafts, wherein each first pair of adjacent parallel drive shafts (each 13 in fig. 2) is synchronized in phase (col. 3, lines 47-51, discloses, that the fig. 2 rotations need to be identical) and placed with the space A defined by the expression:

$$A < \max R_i + \max R_{i+1}$$

where  $\max R_i + \max R_{i+1}$  is the sum of radii of circles described by the light sources maximally distanced from the axes of the corresponding drive shafts (Clear from fig. 2, that the two circumferences overlap in the middle; also see col. 2, lines 3-11).

Malkin, Yuen and Lewis are analogous art because they are both from the same field of endeavor namely, rotating, illuminated advertising displays.

At the time of the invention it would have been obvious to one of ordinary skill in the art to increase the number of rotating drive shafts of Malkin and Yuen and place them as taught by Lewis.

The motivation for doing so would have been to allow a larger display surface, as well as to continually change the displayed colors (Lewis; col. 1, lines 15-20).

***Allowable Subject Matter***

14. Claims 32, 39 and 40 are allowed.

***Conclusion***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William L. Boddie whose telephone number is (571) 272-0666. The examiner can normally be reached on Monday through Friday, 7:30 - 4:30 EST.

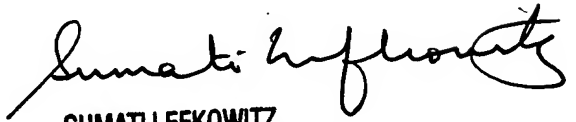
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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10/22/07

wlb

  
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